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Body Polluted: Questions of Scale, Gender, and Remedy

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This Article offers a critique of tort remedies grounded in feminist theory of the body. It demonstrates how tort law is invested in a notion of an individuated legal subject, which fails to capture the critical interconnectedness of bodies in a social, political, historical, and colonial context. Taking the "injury" of endocrine disruption in a Canadian Aboriginal community as an example of a contemporary pollution harm, the analysis considers various torts on a conceptual level, and what they might offer the Aamjiwnaang First Nation in the way of remedies. In each case, what the tort can do depends on how the injury, and the scale at which the entity taken to have suffered the injury, is conceived.

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I. INTRODUCTION

This Article explores whether tort law can provide a remedy for the injury of "endocrine disruption"[1] at an individual or a collective level. Many activists in the environmental justice movement want to say unequivocally that the "gender-bending" of endocrine disruption is a new, dramatic, and horrifying harm. The example of the declining sex ratio of the Aamjiwnaang First Nation ("Aamjiwnaang"), a Canadian Aboriginal community experiencing chronic chemical pollution, demonstrates that finding a "harm" or "injury" in law is fraught with difficulties. On an individual level, an altered sex ratio (the number of boy babies born relative to the number of girl babies) cannot constitute a harm. No single Aboriginal mother could prove that the pollution had specifically prevented her from conceiving a boy—that she had suffered a harm because she *should* have conceived a boy. But her chances of welcoming a son seem to be less than they should be. The concern, from the perspective of the Aamjiwnaang, is essentially one of cultural survival. It is the collective loss of a viable future. Thus, the notion of a collective harm highlights the fact that this problem is situated in the context of an Aboriginal community already struggling, as many are, with stemming the loss of culture and tradition amongst its people. Further, because emerging environmental health harms are often localized and concentrated around the worst pollution sources, and because they are often distributed along race and class differentials, endocrine disruption is a central concern of the environmental justice movement.[2]

Understanding the nature of contemporary pollution harms is essential to the crafting of effective remedies. In particular, this Article seeks to destabilize the tendency in the environmental justice movement to conceptualize harms on the basis of unquestioned assumptions about what is "natural" and what is "normal"—assumptions that fly in the face of developments in sex and gender

1. The theory of endocrine disruption posits that certain synthetic chemicals that share structural features with common sex hormones can mimic hormone action in the body, triggering a host of growth, metabolic, and reproductive processes and thus having far reaching and diverse effects on health. For more on endocrine disruption, see *infra* Part III.B and Dayna Nadine Scott, *"Gender-Benders": Sex and Law in the Constitution of Polluted Bodies*, 17 FEMINIST LEGAL STUD. 241, 243, 248–49 (2009).

2. *Id.* at 243–44.

theory. It also seeks to challenge tort scholars to imagine law differently. "Legal scholars have begun exploring the idea that tort law is too corporeal—that it is tethered too tightly to proof of physical damages—and should move towards the recognition of 'interests-based' damage assessments in specific contexts."[3] But even where recent tort scholarship has included some calls to expand what should count as harm or physical damage, the scale at which we look to find such damage remains primarily at the level of the individual—the single unitary legal subject. Perhaps, as has been suggested, we should move away from assessing physical damage only on the basis of a factually observable change in the physical structure of persons and adopt a more contextual approach based on social perceptions of damage. The way that pollution manifests—and the blameworthiness of its perpetuation in certain communities—demands that tort law evolve, and that we, as legal scholars, work creatively to devise new legal remedies for emerging injuries.

This Article offers a critique of tort remedies grounded in feminist theory of the body. It exposes how tort law is invested in a notion of an individuated legal subject that, in the case of Aamjiwnaang First Nation, fails to capture the critical interconnectedness of bodies in a community—in a social, political, historical, and colonial context. The analysis considers various torts on a conceptual level and what each might offer the Aamjiwnaang in the way of remedies. In each case, the remedies provided for the torts depend on how the injury—and the scale at which we find the injury—are conceived.

This Article finds that none of these remedies adequately account for the way pollution has saturated the Aamjiwnaang community, been soaked up in bodies, and altered social and cultural relations. But brainstorming around tort law's potential remedies at various scales allows for the body to be opened up—for the gender-bending synthetic chemicals flowing through bodies to become visible, to expose their free movement between individuals and their worlds—to the point that our insistence on a fixed bodily boundary, and a centrally controlled self, begins to break down. Further, the analysis demonstrates that the scale at which we conceive of an

3. *Id.* at 258.

"injury" shapes the determination of whether, and on what terms, the injury is seen as "remediable." These conceptions and determinations then, in turn, shape ideas about allocating blame for the harm. Essentially, the argument is that our constructions of "injury"—where and how we choose to find it—carry consequences for communities affected by contemporary pollution harms.

The Article consists of three parts. In Part II, I review the contamination of the Aamjiwnaang and describe how the struggle of this small reserve community and its campaign against endocrine disruption have garnered the attention of environmental justice activists worldwide.[4] In Part III, I explain how tort law might conceive of the harm or the injury that is visited on the Aamjiwnaang, including what the gender dimension of that harm might be. Finally, in Part IV, I begin to brainstorm how various torts might operate at different scales of injury to provide a remedy for the Aamjiwnaang people.

II. THE CONTAMINATION OF AAMJIWNAANG FIRST NATION

> For the residents of Aamjiwnaang First Nation, living in the shadow of Canada's "Chemical Valley," a recent epidemiological study confirmed what they had suspected for years—that the community's sex ratio (the number of boy babies born relative to the number of girls) is declining at an alarming rate. It is widely speculated that chronic exposure to toxic chemical pollution, specifically a group of endocrine-disrupting chemicals provocatively nicknamed the "gender-benders," is responsible. . . .
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> The Aamjiwnaang First Nation is a community of approximately 900 Aanishinaabek people living on a reserve located immediately adjacent to Sarnia's notorious [petrochemical corridor]. This area of southwestern Ontario, located at the southern tip of Lake Huron, bordering Michigan, USA, houses one of Canada's largest concentrations of industry, including several large

4. This case study draws largely on work that has been published elsewhere. *See* Dayna Nadine Scott, *Confronting Chronic Pollution: A Socio-Legal Analysis of Risk and Precaution*, 46 OSGOODE HALL L.J. 293 (2008) [hereinafter Scott, *Chronic Pollution*]; Scott, *supra* note 1.

petrochemical, polymer, and chemical industrial plants, as well as coal-fired utilities on both sides of the border. In recent years, residents of the reserve began to wonder about why they were starting to require two softball teams to accommodate the girls on reserve, and they could barely field one team of boys. Soon, they had documented a marked decrease in the number of males born into their community. An investigation was launched to explain this phenomenon, and the Aamjiwnaang First Nation now has the unwelcome distinction of the world's lowest documented birth ratio.

The study suggests that the noted decline in sex ratio could be correlated with the community members' exposure to industrial pollutants. Other studies conducted in this region have found changes in the sex ratios and reproductive ability of fish, bird and turtle populations, which are thought to be due to exposures to endocrine-disrupting chemicals. Endocrine disruptors are said to have a hormone-mimicking effect. They may induce long-term effects upon low-dose exposures in susceptible developmental phases. There are a number of competing hypotheses for how, specifically, these environmental contaminants disrupt the human endocrine system, and how they might be influencing sex ratio. [According to t]he hypothesis with the most traction[,] . . . interference with a mother's hormonal milieu at key developmental stages very early in a pregnancy can induce sex-specific mortality in miscarriage. Essentially, the hypothesis is that embryos that would become boy babies are being disproportionately lost in early miscarriages, usually occurring before the prospective mother even becomes aware that she may have been pregnant.

Advocates railing against chronic pollution and contamination are increasingly identifying with and being inspired by the environmental justice movement. These activists see "connections between social welfare and the environment, pollution and the home, and pollution and discrimination, that have gone unnoticed (or conveniently

ignored) by mainstream environmentalists." A central focus is the notion of *disproportionate burdens*—the claim that while pollution is everywhere, it is most easily found in a few choice places, particularly those inhabited by the poor, the racialised, and the marginalised. The focus of organising is on the fundamental power differential that exists between the polluters and the polluted. As a result, many activists in the environmental justice movement want to be able to say unequivocally that the "gender-bending" of endocrine disruption is a new, dramatic and horrifying harm. . . .

The central claim of the environmental justice movement—that some of us live more downstream than others—is a stark and obvious truth in Sarnia's Chemical Valley. Talfourd Creek gathers its waters in an industrial corridor [that is] home to 40% of Canada's chemical production before it meanders through the Aamjiwnaang reserve and empties into the St. Clair River. There are 62 large emitting industrial facilities within 25 [kilometers] of the reserve. In 2005 there were 5.7 million kilograms of toxic air pollutants released from the facilities on the Canadian side of the border alone. The Aamjiwnaang First Nation, confined to a small portion of [its] traditional territory by colonialist law, has been steadily surrounded by industry and many residents now feel that it is being slowly choked out by the legacy of a century of petrochemical production.

Contamination of their bodies and their traditional territory has had an enormous emotional effect on the community. While the skewed sex ratio may be a potent symbol of the complexity of contemporary pollution harms, it is by no means the only manifestation of the pervasive, diffuse and body-altering pollution that the residents report. They experience elevated rates of cancer and diabetes, developmental and attention-deficit disorders, [and] asthma and other respiratory ailments. The recent years have witnessed a building anger as residents learn of the extent of their health problems and the mounting evidence linking

those problems to the actions of their industrial neighbors. They are a deeply injured community.[5]

III. IDENTIFYING THE INJURY

Communities struggling with contamination face significant challenges in seeking to achieve "environmental justice" through tort litigation.[6] These toxic torts are, in fact, notoriously difficult to win; the injury suffered by the Aamjiwnaang is a classic example of how contemporary pollution harms are currently beyond the reach of effective resolution through tort law.

> To find an injury in law we need to identify a cause and effect relationship that culminates in a tangible harm. Not only is the causality contested in this case, but *a tangible harm* is elusive. Thinking specifically of the issue of the declining sex ratio, how [should] we characterise what has been lost in the Aamjiwnaang situation? Only chances—chances to welcome sons. No one mother could ever prove that she specifically was harmed; that she specifically should have conceived a boy. No child has been harmed. But it is difficult to fathom that there is no harm being done. It is clear that there is wounding to be accounted for.
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> Cultural anthropologist Sarah Lochlann Jain employs the term "wound" to capture the sense that harms exist out there in the world that are not contained in the legal notion of "injury." And, as she reminds us, "wellness and wounding will always be at play within various cross-cutting hierarchies" pre-existing in our society. "[W]ounding itself," Jain states, "brings a mode of attention to objects into being . . . objects only emerge as separate from the [agent] when something goes wrong." It is as if the chronic chemical pollution in the streams, rivers, air, and soil of the Aamjiwnaang reserve is suddenly rendered

5. Scott, *supra* note 1, at 241–44 (emphasis added) (footnotes omitted) (citations omitted).

6. *See* Melissa Toffolon-Weiss & J. Timmons Roberts, *Toxic Torts, Public Interest Law, and Environmental Justice: Evidence from Louisiana*, 26 LAW & POL'Y 259, 261 (2004).

visible by the duly documented epidemiological study of the plummeting sex ratio. . . .

How should we understand the harm or the injury that the Aamjiwnaang community has suffered, and continues to suffer? Or, as a colleague (half-jokingly) put it to me, "What's the harm in a few less men?" Why does this sex ratio dynamic, a declining proportion of boys born into a community, present a challenge to [tort law]? In this part, I employ Jain's critique of "injury" in law to unpack the issue of harm presented by this particular environmental health problem.[7]

Jain observes that

[t]ort law's prerequisite . . . is that the (injured) "physical body . . . come[] to the table as a preceding artifact being reclaimed after having been unjustly altered." It is offered up as collateral for the "justness" of a legal logic through which certain practices, like the discharge of [endocrine-disrupting] chemicals into the environment, in theory, become morally reprehensible or unacceptable. On top of the inability of the Aamjiwnaang community to produce a single or distinct injured body, "unjustly altered," the chronic low-dose exposures to pollution that are suspected to be responsible for the "injury" are (for the most part, at least) legally sanctioned and permitted. The actions of the corporate polluters, instead of being seen as morally reprehensible, are in fact state-sanctioned acts of productive economic activity.

In this respect, law appears ambivalent to the endocrine-disrupting pollution. The basis upon which the prevailing regulatory approach rests is that pollution is permitted according to certain specified limits or standards set down in a regulation, and in the rare case where this legally-sanctioned pollution results in proven harm, the state relies on tort law to step in and provide compensation. Civil remedies between individuals were long ago

7. Scott, *supra* note 1, at 244–45 (third and fourth alterations in original) (emphasis added) (citations omitted).

dismissed as being ineffective as legal tools for the general systemic control of pollution (although they continue to be relied upon to "pick up the slack" when things go wrong). A regulatory approach was judged to be more effective.

The regime is typically administered by technical agencies staffed with scientific and engineering experts focused on determining the "safe" levels of various pollutants in the environment. The job is one of identifying pollution sources, bringing them under permit, and then controlling the quality and quantity of emissions discharged through the terms and conditions of the permit. The underlying assumption is that the natural environment can be used to assimilate (dilute and cleanse) the waste generated through human activity. This [remains] the basis for the contemporary regulatory regime: typically, the governing statute contains a general discharge prohibition on contaminants in combination with the issuance of permits for emissions in accordance with a [certificate of approval] issued by the relevant authority. The certificate [of approval] is a legally binding licence that sets out the conditions under which a facility can operate, [often] including . . . the maximum permissible contaminant emission levels.

The ambivalence of our law, then, derives from the continued prominence of the understanding of environmental health harms as incidental to, and not central to, industrial production. Any harm caused by legally sanctioned, permitted pollution (as most of it is in Sarnia's chemical corridor) is treated as a by-product or an accidental side effect of the economic activity. It remains "unintentional." And yet, pollution is a "fixed feature" of modern economies. As Richard Lazarus has noted, "pollution in our regulatory environment finds the pathway of least resistance. It finds those places where the laws are least enforced and least understood." The production of chemicals, the refining of oil, and the generation of

electricity in the Sarnia corridor has harm and wounding embedded in it. It is equally the *production* of pollution.[8]

A. "Wounding"

"Wounds adhere differently to different people." And the act of wounding, as Jain shows, focuses attention on things [that] were previously not clearly in view. But the fact that the chronic contamination of the Aamjiwnaang territory was only rendered visible by the sudden notoriety of having the world's lowest birth ratio, is also largely due to the nature of toxic chemical pollution. It is invisible. The "risks" associated with it are virtually undetectable without scientific investigation. They manifest as "harms caused by molecules." To understand the mechanics of endocrine disruption, for example, the way that certain chemicals mimic hormones in the body by binding with available receptors and influencing gene expression, we are forced to rely on biomedical ways of knowing. The consequences of exposure tend to eventually manifest themselves in ways that start from within the body and work their way out. Further, the latency period associated with many contemporary environmental health risks underscores their psychological impact in that it renders the experience of risk unbounded: "an 'all clear' is never sounded." Bodies contain chemicals banned years before the individual's birth; contamination can be extremely long-lasting, and can be passed down from generation to generation. For example, in part because it is widely accepted among epidemiologists that exposures to toxic chemicals in one generation may produce effects in the next, no one can tell the Aamjiwnaang community whether they face a present danger, or are experiencing the latent manifestation of exposures long past: as one Band member states, "[W]as it me, was it my dad, my mom? . . . [W]e don't know who's been exposed."[9]

8. *Id.* at 245–46 (second alteration in original) (emphasis added) (footnotes omitted) (citations omitted).

9. *Id.* at 246–47 (footnote omitted) (citations omitted).

B. The Gendering Effect of Endocrine Disruption

> The mechanics of endocrine disruption are often described in the following way. Certain synthetic chemicals share structural features with common sex hormones; these chemicals, or xenoestrogens, mimic hormone action in the body by binding with, and activating, available hormone receptors. The endocrine systems of the body are understood as responsible for regulating complex and interconnected physiological processes, and thus synthetic chemicals that interfere with these systems are thought to have profound and wide-ranging effects on health. As hormones travel in the blood in very small concentrations, even very low levels of xenoestrogens can disrupt the flow of internal communications, triggering biological responses and functions in the processes of embryonic growth and development. Accordingly, susceptibility to xenoestrogens is thought to depend highly on sex and on the timing of exposures.[10]

We rarely hear about the phenomenon of endocrine disruption without reference to the controversial theory of "feminization."[11] This posits that we are experiencing, not just in humans but also in animal species throughout the industrialized world, a feminization trend that is observable across a variety of markers, including decreased sperm counts, increasing rates of testicular cancers, declining levels of testosterone, and high incidence of undescended testes.[12] "These things theoretically have a common etiology," according to Dr. Devra Davis.[13] Scientists hypothesize that a declining sex ratio may be just one of a number of manifestations of

10. *Id.* at 248–49 (footnotes omitted).

11. Martin Mittelstaedt, *Humanity at Risk: Are the Males Going First?*, GLOBE & MAIL (Toronto), Sept. 20, 2008, at F4.

12. Gina M. Solomon & Ted Schettler, *Environment and Health: Endocrine Disruption and Potential Human Health Implications*, 163 CAN. MED. ASS'N J. 1471, 1472 (2000). Nancy Langston also attributes rising "rates of intersexuality" to endocrine disruption. Nancy Langston, *The Retreat from Precaution: Regulating Diethylstilbestrol (DES), Endocrine Disruptors, and Environmental Health*, 13 ENVTL. HIST. 41, 41 (2008).

13. Mittelstaedt, *supra* note 11.

the feminization trend that is tied to endocrine disruption, which is very broadly experienced across the industrialized world.[14]

> The gender dimension of the "harm" experienced by the Aamjiwnaang community is as difficult to demonstrate as it is to dismiss. The impact of pollution seems not only to be gendered, but *gendering*. By this I mean that the endocrine disruptors do not just dole out their environmental health horrors disproportionately as between men and women, or girls and boys, they actually seem to be driving whether we get girls or boys. The pollution is feared to be actively *producing* gender. . . .
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> The Aamjiwnaang experience is marked by the individual trauma of repeated miscarriage and the collective loss of a viable future. The skewed sex ratio, conceptualised as a "harm," is one that is both visited specifically on women, and felt by the community as a whole. As Joanne Conaghan has argued and the previous part has made clear, "harm" is an "unstable, slippery concept, highly dependent on context and very much the subject of interpretation." But at the same time, as Robin West has argued, the question of what constitutes a "harm" is central to legal theory. Further, the question is a critical one for feminists: as Martha Chamallas and Linda Kerber have shown, tort law traditionally falters when it is faced with claims based on harms for which there is no "precise masculine analog."
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> According to Robin West's "connection thesis," women's material connection to future human life necessarily produces a gendered notion of harm. The prospect of pregnancy, of contributing to a future generation, marks the key difference between women and men. Underlying all branches of feminist theory, West says, is the notion that "women's existential state . . . is grounded in women's unique potential for physical, 'material connection' to human life." This is the one place where even feminism's divisions dissolve: we all come together, she says, on the "discovery or rediscovery of the

14. Solomon & Schettler, *supra* note 12, at 1472–73; *see* Mittelstaedt, *supra* note 11.

> importance of women's fundamental material difference from men."
>
> Women are actually or potentially materially connected to other human life. Men aren't. This material fact has existential consequences . . . [it] defines women's subjective, phenomenological and existential state, just as surely as the inevitability of material separation from the other defines men's existential state.Somewhat predictably, then, Aamjiwnaang mothers and potential mothers, even if they are not uniquely "harmed," are usually identified as the medium through which the poisoning occurs: they are seen as sites of contamination. The notion of the mothers as mediums for the pollution is reinforced by various strategies of resistance that have been employed by residents of the Aamjiwnaang community themselves, including "body burden" testing and "body mapping" exercises, and even self-help strategies such as leaving the reserve when trying to become or once becoming pregnant. This is true even as the epidemiological evidence remains contested as to the significance of the maternal influence. In fact, the scientific literature that links endocrine disruptors with skewed sex ratios focuses on male *and* female reproduction, with researchers often unwilling to make a call at this point as to which is the more likely mode of action.[15]

Sex is typically understood as a stable, pre-cultural reality grounded in biology that can verified through a visual assessment,[16] while gender is often understood to be socially constructed—a product of our socialization. But it is not just gender that is constructed, of course, it is sex as well. In the present example, focusing our gaze on the declining sex ratio and the mechanics of endocrine disruption brings the body into focus and exposes the active construction and categorization of bodies into discrete sexes.

> Conventional wisdom holds that sexual identity occurs "naturally" as a binary category, which consists of two

15. Scott, *supra* note 1, at 247–48 (emphases added) (footnote omitted) (citations omitted).

16. *See* Anne Bloom, *To Be Real*, 88 N.C. L. REV. 357, 413–24 (2010).

> "opposite" sexes: male and female. That there are only two mutually exclusive categories is not questioned in the environmental health movement. But as the growing literature on intersexuality makes clear, "many bodies, even in 'nature,' simply do not fit very well into the rigid boundaries of a male/female classification." Conservative estimates put the incidence of intersexuality at around 1 in 2000 births, with as many as 1 in 100 of us born with bodies "differing" from the standard traits of male or female.[17]

Where we draw the line between "male" and "female" is now recognized as arbitrary, and sex is better understood as occupying a continuum.

> But, many will protest, surely genetics settles the matter conclusively: it is the presence or absence of the Y chromosome that creates a binary. Students of introductory biology courses may recall a standard narrative something along these lines: *A person's sex is predetermined in the sperm gamete. The cells of the egg gamete all possess the XX sex chromosomes. Around half of the sperm gametes contain the X chromosome and others possess the Y chromosome. In light of this, there are two possibilities that can occur during fertilisation between male and female gametes, XX and XY. Since sperm are the variable factor, they are responsible for determining sex.*
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> In life, it turns out, it is more complicated. In some cases, babies are born with an extra X or an extra Y, and some babies are born with only one X. In many more cases, babies are born with, or individuals develop later in their life, physical traits that do not comport with the category designated to them. For example, some XX individuals have both ovaries and the reproductive equipment we might typically associate with a male. And in many more cases still, individuals exhibit personality traits or gender identities that put them on a collision course with prevailing cultural expectations about the characteristics that are

17. Scott, *supra* note 1, at 253 (citations omitted).

typically associated with the two categories of sex identity. If this all seems new, it is because, as Anne Bloom demonstrates beautifully, several authoritative discourses and institutions (law and medicine chief among them) have "collaborated" so as "to make binary sexual difference appear more 'natural' than it is."

Hormones, of course, are implicated as well. According to the standard line, sex is determined by genetic factors, and sexual differentiation is driven by hormones. As Nelly Oudshoorn's work exposes, the "discovery" of hormones early in the twentieth century became celebrated as providing the "missing link" between genetic and physiological models of sex determination. It quickly became accepted that the "intentions of genes must always be carried through by appropriate hormones." Accordingly, hormones assumed the role of the "chemical messengers" of masculinity and femininity. . . .

. . . [I]f there is no natural categorisation of sexual identity as a binary, perhaps there is no normal balance between *two* discrete sexes.[18] Without these critical assumptions in place, how can we characterize the declining sex ratio of the Aamjiwnaang community as a harm? If not through recourse to what is "natural," on what basis can we [ever] determine [whether] endocrine disruption, or pollution, . . . is harmful? Can we say that uninvited changes to bodies are unwelcome? That just as "risks," however rational to incur at a societal level, are unacceptable if they are imposed involuntarily or if they result in the unfair sharing of benefits and burdens, so [the uninvited interference with bodies, with reproduction] in this case, is unacceptable?

[One answer is] that we validate the harms of the pollution that are tied to illness and suffering and not those that signify *difference*. Those harmed by the pollution are

18. As Anne Bottomley has noted, these assumptions have been fundamental: "knowledge, of ourselves and of our world, has been predicated upon binary constructs of . . . male/female . . . ." Anne Bottomley, *The Many Appearances of the Body in Feminist Scholarship*, *in* BODY LORE AND LAWS 127, 127 (Andrew Bainham et al. eds., 2002).

> the people living in Aamjiwnaang—they are the women, men and children, mostly girls, but nevertheless the children of the Band. They are:
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> the young [A]boriginal mothers, they are parents who routinely receive 'emergency alerts' over the radio indicating that they should 'Shelter in Place' as a result of an incident or a 'fugitive release' from neighboring industry, they are daycare workers responding to the sirens by shuffling toddlers inside and closing the vents, they are health clinic staff staring down bewildering statistics, they are teenagers struggling with asthma, developmental and attention-deficit disorders, and they are young children prevented from swimming in the contaminated creek that passes through their traditional powwow grounds.These are the people living with the effects of the chronic exposures to pollution that emanate from Sarnia's Chemical Valley. The community has more than its fair share of illness and suffering: 17% of adults and 22% of children surveyed have asthma; about 25% of adults experience high blood pressure and/or chronic headaches; about 25% of children suffer from learning disabilities and behavioural problems; and about 40% of women have experienced miscarriage or stillbirth.[19]

Another answer is that we adopt an "embodied" approach that validates the real and material consequences that the pollution is having *within* bodies. Instead of insisting on some

> "unified and singular bodily form of the male and the female," [this approach would place] attention [on] the universal human condition of being "in" our bodies. Human embodiment spans all sorts of biological imperatives: from hunger and excretion to aging and dying. It also includes change through various life stages driven by hormonal cycles. These cycles create windows of vulnerability that have a distinct biological and thus gendered nature. It is here that estrogens take on a pivotal role, and the role of

19. Scott, *supra* note 1, at 253, 255–56 (second emphasis added) (footnotes omitted) (citations omitted).

> xenoestrogens, in particular, becomes salient. When synthetic chemicals, uninvited, take over for hormones, binding with available receptors and orchestrating physiological processes, it has real, tangible, material consequences for bodies. When this happens in the context of reproduction, it has *gendering* consequences.[20]

Here, in the context of endocrine disruption on an Aboriginal reserve surrounded by petrochemical production, these answers are attractive because they seem to offer the potential to underscore the blameworthiness of the ongoing pollution. But it is clear: the harm to the community's sex ratio is a harm in the abstract.

> Why should the [declining] sex ratio issue garner so much attention when the actual suffering and poor health of living beings—women, men and children—attracts only indifference and dismissal? This brings us back to the glaring unfairness of the pollution's disproportionate impact on the native community in the context of their colonial history. In fact, understanding why the [effects of chronic pollution] might be showing up on the Aamjiwnaang reserve and not in "white" Sarnia goes a long way to re-centering the role of land, capital, race and colonisation. The Aanishinaabek people have occupied their lands at the southernmost tip of Lake Huron for hundreds of years. As [B]and member Ron Plain will tell you, on the Aamjiwnaang burial grounds, you will find the remains of four generations of his ancestors, all in one place, literally on the fenceline of a large refinery: "[W]e all lived *here*—all our lives." The permanence of both the pollution and of the Aamjiwnaang First Nation on the landscape, offers a possible explanation for why we might see a disproportionate effect of chronic pollution on this community: they are grounded both spatially and historically. If the mechanism behind the decline in sex ratio has a generational component, it makes sense that it would emerge in the First Nation community first. In south Sarnia, for example, which might experience comparable

20. *Id.* at 256 (citations omitted).

exposures to airborne pollutants, you are likely to find people who were born all over the country, if not the world. On the Aamjiwnaang reserve, you will not. It is a stark reminder of how contemporary pollution exists in social contexts that can exacerbate its effects.[21]

C. Collective Harm

The impact of the pollution on the Aamjiwnaang people is imposed not only on individual bodies, of course, but on the community as a whole. In fact, it is through the work of feminist legal scholars towards exposing the nature of gendered harm that we have come to clearly understand that "injury has a social as well as an individual dimension." As Joanne Conaghan states, a person's membership in a "particular class, group, race or gender can significantly shape the nature and degree of harm they sustain." It is in this vein that I turn next to the notion of a "collective harm" in the hopes that it can better capture the wounds flowing from the sex ratio skewing on the Aamjiwnaang reserve. As one [B]and member has stated: "[O]ur daughters will have to go outside our community for their partners." The concern is essentially one about cultural survival. It is the collective loss of a viable future. Thus the notion of a collective harm highlights the fact that this problem is situated in the context of an aboriginal community already struggling, as many are, with stemming the loss of culture and tradition amongst their people.

"Injury," as David Engel argues, "opens a window onto identity." This is because "[w]hen we say that an individual has suffered an injury, we implicitly refer to a self that is constituted in a particular way and is therefore vulnerable to particular kinds of harm." It is the specific history of the Aamjiwnaang First Nation which makes the community, as a whole, particularly vulnerable to pollution harm. As Robert Verchick makes clear:

> [L]ocalised environmental hazards do not simply harm

21. *Id.* at 251 (footnote omitted).

> individuals, they erode family ties and community relationships . . . [they] create community-wide stress that will debilitate the neighborhood in emotional, sociological, and economic ways. To ignore this communal harm is to underestimate severely the true risk involved.
>
> Further, following Verchick, because emerging environmental health harms are often localised and concentrated, and because they tend to be distributed along race and class differentials, the wound to the affected community, in this case the Aamjiwnaang First Nation, takes on a "profound moral character."[22]

As profound a wound as it is, it is clear that locating an injury in individuals is not easy. Even locating a harm at the collective level is fraught with difficulty: conceptualizing the wound suffered by the Aamjiwnaang community (at least in terms of the declining sex ratio) as a harm-in-fact demands allegiance to notions of the "natural" and the "normal" that are highly contested. Contemporary pollution

22. *Id.* at 251–52 (second and fourth alterations in original) (footnote omitted) (citations omitted). Just as Native Americans have characterized the U.S. military's poisoning of Indian land as genocide, so the charge of cultural extermination has been leveled by residents in the case of Aamjiwnaang with respect to the slow poisoning of their people and their traditional territory. In this way, the theory of endocrine disruption, in the context of Aamjiwnaang, encounters a history that, at various times, has included denying racialized groups the capacity for children. Is forced sterilization—the "racist form of mass 'birth control'" described by Angela Davis as it has applied historically to poor black women in the American context—any different from what is happening today on the Aamjiwnaang reserve? Angela Davis, *Racism, Birth Control, and Reproductive Rights*, *in* THE REPRODUCTIVE RIGHTS READER: LAW, MEDICINE, AND THE CONSTRUCTION OF MOTHERHOOD 86, 86 (Nancy Ehrenreich ed., 2008). Class bias and racism, as Davis notes, have always contributed to how we, collectively, figure out who may legitimately contribute to the next generation, to the "future." *See id.* at 88–92. Similarly, Dorothy Roberts has exposed how the material conditions of poverty and oppression have limited the reproductive choices for poor women of color who have been "deemed not even worthy of the dignity of childbearing." Dorothy E. Roberts, *Punishing Drug Addicts Who Have Babies: Women of Color, Equality, and the Right of Privacy*, 104 HARV. L. REV. 1419, 1458 (1991). A parallel could be drawn between historical practices of eugenics—in which outsiders decided on behalf of women, and their communities, whose lives would be worth living and whose children would be welcome in this world—and the current political economy of pollution in Canada. *See* Ruth Hubbard, *Abortion and Disability: Who Should and Who Should Not Inhabit the World*, *in* THE DISABILITY STUDIES READER 187 (Lennard J. Davis ed., 1997) (discussing the history of eugenics). Perhaps our attitudes toward the evidence of endocrine disruption and its role in the ability of the Aamjiwnaang to replace itself are based on a "cluster of unexamined and unspoken preconceptions about who should and who should not inhabit the world." Shelley Tremain, *Theoretical Perspectives on the Construction on the Gendered Body and Disability*, *in* 1 HEAD, HEART AND HAND: PARTNERSHIPS FOR WOMEN'S HEALTH IN CANADIAN ENVIRONMENTS 455, 481 (Penny van Esterik ed., 2003). Is the lack of public outcry merely a reverberation of Canada's own genocidal past? Is it cultural extermination by a new mechanism?

harms are diffuse, body-altering, cumulative, and probably generational in character. There is wounding to be accounted for, but it is the kind of harm that pushes the limits of our current legal imagination.

IV. IMAGINING A REMEDY

A tort is a legal construct: it only exists in cases where there is a wrong for which the law provides a remedy.[23] In general, tort law provides that compensation, usually in the form of money damages, be paid for an injury suffered as a result of the wrongful conduct of others.[24] Can tort law provide a remedy for the injury suffered by the Aamjiwnaang? In the first section of what follows, I offer a critique of tort damages based on the idea of a liberal, individual legal subject grounded in feminist theory of the body. In the second section, I engage in a somewhat creative, or perhaps playful, take on torts in which I consider various torts on a conceptual level and what remedies they might offer the Aamjiwnaang. In each case, what the tort can do depends on how the injury—and the scale defining the injury—are conceived.

A. Beyond Individual Legal Subjects

The central difficulty for tort law in providing an effective remedy to the Aamjiwnaang community derives from its underlying assumption that "society is composed of free separate, autonomous individuals, competing with each other in pursuit of their own self-interest."[25] Tort law is *defined* as the law governing the obligations that *persons* are deemed to owe each other.[26] This is where a feminist critique gains traction. Where "tort law, as traditionally presented, presupposes the essential separateness of individuals from each

23. LEWIS N. KLAR, TORT LAW 1 (4th ed. 2008) (citing Justice La Forest in Angus v. Hart [1988], 2 S.C.R. 256, 264, para. 17 (Can.)).

24. *Id.* (citing Justice Cory in Hall v. Hebert [1993], 2 S.C.R. 159, 200, para. 58 (Can.)).

25. Joanne Conaghan, *Gendered Harms and the Law of Tort: Remedying (Sexual) Harassment*, 16 OXFORD J. OF LEGAL STUD. 407, 408 (1995).

26. *See* BALLENTINE'S LAW DICTIONARY (3d ed. 2010), *available at* LEXIS-BTINES. Presumably, on an equal basis—never mind that, in most cases—the idea of a relationship of formal equality between the plaintiff and the defendant is a pure fantasy.

other, feminist perspectives recognise, from the very outset, our necessary interconnectedness."[27]

Robin West, as noted in Part II, challenges the notion of "separateness" for women based on her connection thesis: "Women are *not* essentially, necessarily, inevitably, invariably, always, and forever separate from other human beings . . ."[28] Her thesis is strengthened by emerging work by scholars of fetal microchimerism, such as Aryn Martin, who demonstrate that not only is women's "separateness" challenged by the *possibility* of reproduction but the maternal body is also "irretrievably transformed by the experience of pregnancy."[29] As these scholars have shown, the boundaries of human individuality are permanently blurred by the fluid movement and exchange of cells that occurs between a mother and her fetus.[30] Children of all genders will forever harbor cells belonging to their mothers within their own bodies.[31] And so we can challenge the separation thesis on a deeper level: not only should women not be conceived of as completely *separate* from other life, but men should not either. All living things are embedded and interwoven into larger webs of being.

The idea of humans as organisms embedded in dynamic systems invites a Deleuzian conception of the body, which does not rely on an individuated subject.[32] As Elizabeth Grosz argues, we need to understand the body "not as an organism or entity in itself, but as a system, or series of open-ended systems, functioning within other huge systems it cannot control . . . ."[33] Applying this perspective places the Aamjiwnaang people as subjects immersed in a social, ecological, political, and historical context that accentuates their

27. Joanne Conaghan, *Tort Law and the Feminist Critique of Reason*, *in* FEMINIST PERSPECTIVES ON THE FOUNDATIONAL SUBJECTS OF LAW 47, 47 (Anne Bottomley ed., 1996).

28. Robin West, *Jurisprudence and Gender*, 55 U. CHI. L. REV. 1, 2 (1988) (emphasis added).

29. Aryn Martin, *"Your Mother's Always with You": Material Feminism and Fetomaternal Microchimerism*, 33 RESOURCES FOR FEMINIST RES. (SPECIAL ISSUE) (forthcoming 2009).

30. *See* West, *supra* note 28, at 2–3.

31. *See id.* at 21.

32. Bottomley, *supra* note 18, at 140. Instead, a Deleuzian conception, in Anne Bottomley's words, calls for a "morphing of the body into a site of patterns, flows and intensities in which the emphasis is continually on movement." *Id.*

33. ELIZABETH GROSZ, THE NICK OF TIME: POLITICS, EVOLUTION, AND THE UNTIMELY 3 (2004).

vulnerabilities to the pollution—to the intensities and flows operating at a molecular level, to the energies and connections between synthetic hormones and available receptors within bodies. In emphasizing the capacity of bodies to affect and be affected by other bodies, this conception, therefore, "undermines the notion of a fixed boundary between subject and object and between the self and its other."[34] It represents a shift away from the notion of the self as the primary subject of central control.[35] As Richardson argues, however, this is not necessarily as conceptually debilitating as one might assume: "A distinct self does emerge but through patterns of relationality rather than in opposition from its other."[36]

The challenge to these generally accepted boundaries of the person raises obvious questions of human agency.[37] We are all "organisms assimilating, seeking, manipulating [our] worlds, even as [we] accommodate and respond to them."[38] In other words, we are neither completely free and autonomous nor passive. The image of endocrine disruption constructed by scientists in fact reinforces the idea that matter is inherently interactive, not inert. The metaphor of hormones as *messengers*—moving through the body, picking up "packages" from the "outside," delivering the packages to receptive agents, igniting and transforming productive processes—reinforces the understanding that bodies are dynamic systems.

As Richardson argues, a "refusal to delineate fixed boundaries between the self and its supposed 'outside' offers a new approach to the law of obligations."[39] The focus on individuals as the point of departure in tort law needs to be challenged. But the individual as the fundamental entity of social existence is central to liberal thought: "We *are* individuals, because we are separate from one another."[40]

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34. JANICE RICHARDSON, SELVES, PERSONS, INDIVIDUALS: PHILOSOPHICAL PERSPECTIVES ON WOMEN AND LEGAL OBLIGATIONS 27 (2004).

35. *See id.* at 27–28.

36. *Id.* at 27.

37. *Id.* at 31.

38. SUSAN OYAMA, EVOLUTION'S EYE: A SYSTEMS VIEW OF THE BIOLOGY-CULTURE DIVIDE 95 (2000).

39. RICHARDSON, *supra* note 34, at 31.

40. Ted Decoste, *Taking Torts Progressively*, *in* TORT THEORY 240, 243 (Ken Cooper-Stephenson & Elaine Gibson eds., 1993).

And this is not just in a physical sense: "what is important for the liberal is that our individuation is normative."[41]

We are individuals because we choose to be. Individualism is the foundation for the sacred liberal values of choice, autonomy, and self-determination.[42]

> One of the basic assumptions in tort law is that we are envisaged as individuals who are owners of our own abilities, such as our ability to work and our bodies. If anyone negligently injures us or prevents us from being able to earn a living we can claim damages because we own parts of our bodies and life chances in a way that is analogous to the way in which we own property.[43]

The declining sex ratio emerges as an eruption of unpredictability in a material world that is otherwise tightly structured by forces external to the Aamjiwnaang. We need a broader conception of the legal subject to adequately understand the harm where the subjects of pollution are not easily characterized as individual, liberal, monadic entities, but are instead understood as embedded in cultural histories, tied to the land, and inseparable from local intensities and flows, emitted particles, energies, and connections operating on a molecular level.

Why is the individual person the appropriate unit or level of analysis for assessing tort-law damages? Why not assess it at the level of communities or, conversely, at the molecular level? Why not assess it at the level of cells? Legal scholars, such as Christian Witting and Donal Nolan, have begun exploring the idea that tort law is too corporeal—that it is tethered too tightly to proof of physical damages—and should move toward the recognition of interests-based damages in certain contexts.[44] But even where recent tort scholarship has included some calls for expansion of what should

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41. *Id.*

42. *Id.*

43. RICHARDSON, *supra* note 34, at 77.

44. Christian Witting, *Physical Damage in Negligence*, 61 CAMBRIDGE L.J. 189 (2002) [hereinafter Witting, *Physical Damage*]; *see also* Donal Nolan, *New Forms of Damage in Negligence*, 70 MOD. L. REV. 59 (2007) (discussing the development of new forms of actionable damages in negligence); Christian Witting, *The House That Dr. Beever Built: Corrective Justice, Principle and the Law of Negligence*, 71 MOD. L. REV. 621 (2008) [hereinafter Witting, *Dr. Beever*] (discussing tort law's role in protecting interests-based damages).

count as harm or "physical damage,"[45] the *scale* at which we look to find such damage remains locked at the level of the individual—the single unitary legal subject.

Witting argues that we should move away from assessing physical damage only on the basis of a factually observable change in the physical structure of persons and advocates for a more contextual approach based on social perceptions of damage.[46] As Nolan says, "the boundaries of the concept of physical damage are not always clear" and could be expanded.[47] This goes some way toward opening up the question of what constitutes physical damage, but leaves unexplored, for now, the matter of the appropriate scale on which we should measure it. In what follows, I explore the way various torts might operate at different scales of injury to provide a remedy to the Aamjiwnaang community.

To begin, if we take the injury to have occurred *inside bodies*, then perhaps we would turn to the tort of battery.

B. Offensive Contact with the Body / Battery

Is there a right to physical integrity or bodily inviolability? Control over our bodies represents a key feminist objective. The notion that we are individual, autonomous bodies would seem to demand that we are all able to "resist the intrusions of others."[48] Presumably this includes the ability to say "yes" or "no" to bodily penetration by synthetic chemicals capable of causing material changes to key metabolic processes within us. So what if individual women in Aamjiwnaang cannot demonstrate a factually observable change—a visible and tangible harm? Isn't *any* interference with our bodies that we have not consented to capable of constituting a harm?

Consider the tort of *battery*. It is said to protect a person's "right to be free from offensive physical contacts."[49] It guards the security

45. *See* Witting, *Physical Damage*, *supra* note 44; *see also* Nolan, *supra* note 44 (discussing forms of actionable damage other than "physical damage"); Nicky Priaulx, *That's One Heck of an "Unruly Horse"! Riding Roughshod over Autonomy in Wrongful Conception*, 12 FEMINIST LEGAL STUD. 317 (2004) (discussing the damage of reproductive autonomy in tort law); Witting, *Dr. Beever*, *supra* note 44 (discussing interests-based damages in tort law).

46. Witting, *Physical Damage*, *supra* note 44, at 190.

47. Nolan, *supra* note 44, at 61.

48. ALAN HYDE, BODIES OF LAW 97 (1997).

49. KLAR, *supra* note 23, at 46.

of the person and protects the "right to autonomy over one's own body."[50] The tort of battery "does not require that the contact be physically harmful to its recipient, or cause any personal injury."[51] Apparently, any offensive contact qualifies, "however trivial it may seem, if it has the potential to affect dignity and self-respect."[52]

But to be actionable, the offensive contact must be either intentional or negligent.[53] The contact does not need to be person-to-person but it must be physical.[54] In our example, what would constitute the offensive contact? Is it the synthetic estrogens entering the body? Is it when they bind to and activate receptors in cells? How can we attach *intention* to these contacts?

We could point to offensive *conduct*, such as the release of chemicals into the air or water, that we may be able to argue is intentional or negligent. An advantage of the tort of battery over the tort of negligence is that the "burden of disproving intention or . . . falls upon the defendant, once the elements of the tort have been proved."[55] The polluters would bear the burden of providing emission data, dispersion models, and epidemiological evidence; the polluters would have to argue that the "contact" between *their* synthetic estrogens released freely into the air, and *our* estrogen receptors, hiding deep in our own bodies, was neither foreseeable, predictable, nor inevitable.

However, with the tort of battery, legal authority provides a defense. As mentioned, most of the pollution in Sarnia's Chemical Valley is state sanctioned. The polluters have permits to emit. These certificates of approval constitute a legally binding license that sets out the conditions under which a facility can operate. So, as long as the facility stays within the maximum permissible contaminant

50. *Id.*

51. *Id.*

52. ALLEN M. LINDEN, CANADIAN TORT LAW 43 (6th ed. 1997).

53. *Id.*

54. *Id.* at 50.

55. *Id.* at 51 (footnote omitted). Negligent battery is the unreasonable disregard of a *foreseeable* risk of contact, even if the contact is not desired or substantially certain to occur. *Id.* at 56.

emission levels as detailed in its permit, the defense of legal authority seems likely to preclude any finding of liability.[56]

Next, if we take the injury to have occurred to *individuals*, we would look to the tort of negligence. Specifically, we might employ the "lost chance" doctrine.

C. *Lost Chances / Negligence*

When a plaintiff cannot establish that a defendant's negligence *caused* her injury on a balance of probabilities, her negligence claim will fail. This is true even if the defendant's negligent conduct increased the possibility of her injury, but did not *probably* cause it.[57] In the case of Aamjiwnaang mothers (or fathers), if the injury were endocrine disruption, causation would likely be difficult to prove.[58] But what if we redefine the very nature of the injury itself? What if the lost chances to bear sons are the harm? The effect of the synthetic chemicals in the body produced—caused—an increased *chance* of conceiving an embryo that would become a girl (given there was already, surely, an almost even chance of that outcome). According to this narrative, the negligent actions of the polluters, which increased the possibility of endocrine disruption, effectively deprived

56. Although, in Canada, there is authority for the proposition that the issuance of a certificate of approval does not provide a full defense to the permit holder from a civil action arising from the approved activity. B.C. Pea Growers Ltd. v. Portage La Prairie, [1966] S.C.R. 150 (Can.); *see also* MARIO D. FAIETA ET AL., ENVIRONMENTAL HARM: CIVIL ACTIONS AND COMPENSATION 242 (1996). In negligence law, while the standard of care is normally limited to the discharge of statutory obligations, there are Canadian cases that suggest that compliance with statutory regulations does not necessarily preclude civil liability for negligence. Ryan v. Corp. of Victoria, [1999] 1 S.C.R. 201 (Can.).

57. *Athey v. Leonati*, [1996] 3 S.C.R. 458 (Can.), holds that causation will be established when the defendant's negligent conduct is the probable cause (proven on a balance of probabilities). Similarly, in *Cottrelle v. Gerrard*, (2003), 233 D.L.R. 4th 45 (Can. Ont. C.A.), the court held that it was not sufficient to show that adequate diagnosis and treatment would have increased the chance for recovery for a patient, the recovery needed to be more likely than not. The "material contribution" test is generally used in situations where a plaintiff may be exposed to harmful substances from various sources, but cannot prove precisely that the substance resulting from the defendant's tortious conduct caused the loss. *Id.* at para. 30. The material-contribution test is used where the "but for" test is inoperable and it is clear that the defendant breached a duty of care, thereby exposing the plaintiff to an unreasonable risk of injury of the type that the plaintiff suffered. Resurfice Corp. v. Hanke, [2007] 1 S.C.R. 333, para. 24–26 (Can.). A contributing factor is material when it falls outside the *de minimis* range. *Athey*, [1996] 3 S.C.R. at 461.

58. The hypothetical claim goes like this: "this synthetic chemical released by this polluter entered my body and activated available hormone receptors at a key moment in my development which had growth, metabolic, or reproductive consequences."

the families on the reserve of chances to welcome boys.[59] The lost chances themselves constitute the injury, and the families are owed compensation.

Used most often in contract cases and increasingly in medical malpractice litigation, the lost chance doctrine can compensate individuals for lost opportunities, based on probabilistic estimates of what would have been expected in the absence of negligence—expectations of what "could have been."[60] So, if an agency improperly disqualifies a lottery ticket diminishing chances of winning, for example, or if a doctor makes mistakes in the course of a person's cancer treatment diminishing the chance of that patient's survival, there is the possibility of recovery, in some jurisdictions,[61] for "lost chance."[62]

For personal injury litigators, the lost chance doctrine offers several advantages. Most importantly, injury and compensation are understood in terms of a lost opportunity or a heightened risk, rather than an ultimate injury, concrete and visible in the body.[63] Thus, the

59. Under this scenario, the hypothetical narrative is this: "this synthetic estrogen released by this polluter entered my body and activated available estrogen receptors at a key moment in the embryo's early development thus 'causing' me to conceive an embryo that would become a girl, instead of a boy . . ."

60. Jeremy Pryor, *Lost Profit or Lost Chance: Reconsidering the Measure of Recovery for Lost Profits in Breach of Contract Actions*, 19 REGENT U. L. REV. 561, 561–63 (2007).

61. *See* Alexander v. Scheid, 726 N.E.2d 272 (Ind. 2000); Verdicchio v. Ricca, 843 A.2d 1042 (N.J. 2004). There is no such possibility of recovery in Canada. *See* KLAR, *supra* note 23, at 116. In the Canadian case of *Cotrelle*, 233 D.L.R. 4th 45, the court found that it was not enough that but for the defendant's breach, there was a chance of a recovery. The chance of recovery must be more likely than not. *Id.*

62. For a discussion of lost chance in contract cases, see Melvin Aron Eisenberg, *Probability and Chance in Contract Law*, 45 UCLA L. REV. 1005, 1049–52 (1998) and Pryor, *supra* note 60, at 571–76. A leading case dealing with the wrongful disqualification of a contestant in a competition states, "Where by contract a [person] has a right to belong to a limited class of competitors, [that person] is possessed of something of value, and it is the duty of the jury to estimate the pecuniary value of that advantage . . . ." Chaplin v. Hicks, (1911) 2 K.B. 786, 796 (Eng.). In the medical malpractice arena, *Hicks v. United States*, 368 F.2d 626 (4th Cir. 1966), is considered a leading case: "If there is any substantial possibility of surviving and the defendant has destroyed it, he is answerable." *Id.* at 632.

63. *See* Joseph H. King, Jr., *"Reduction of Likelihood" Reformulation and Other Retrofitting of the Loss-of-a-Chance Doctrine*, 28 U. MEM. L. REV. 491, 492 (1998) ("[W]hen a defendant tortiously destroys or reduces a victim's prospects for achieving a more favorable outcome, the plaintiff should be compensated for that lost prospect. Damages should be based on the extent to which the defendant's tortious conduct reduced the plaintiff's likelihood of receiving a better outcome." (footnotes omitted)).

doctrine potentially provides a way around the difficult questions of causation and harm that plague most toxic tort cases.[64]

Usually in these cases, however, it is unproblematically stated that the plaintiff has lost her chance to achieve a preferred outcome—a more *favorable* result. As Professor Joseph King, a leading proponent of the doctrine in the United States, notes, the loss of a chance is the loss of "achieving a favorable outcome or of avoiding an adverse consequence . . . ."[65] The doctrine rests on the idea that "depriving a person of the chance of good results is in fact harmful to that person."[66] Chance has value. But, does applying the doctrine to the declining Aamjiwnaang sex ratio imply that boy babies are *preferred* to girl babies? That having a boy would constitute a more favorable result? That a boy child is more valuable to families and communities than a girl child? How can we call a failure to produce boys a harm without devaluing girls?

We might turn to the so-called wrongful birth cases for insight in this regard.[67] In these cases, parents file negligence claims for faulty sterilization procedures or incorrect contraception advice that result in the birth of an unwanted child.[68] When a doctor's negligence results in the birth of a healthy child, the assessment of damages becomes a difficult issue.[69] Courts have made surprising findings in this regard; for example, in one case the court stated categorically that "the benefits a child brings to a family outweigh the costs of that child to a family."[70] Apparently, even if the child were unwanted—where the parents had taken specific steps to avoid the child's birth, and the child would not have been born but for the negligence of a

64. *See, e.g.*, Kristin Bohlken, *Fitting the Square Peg of Alternative Toxic Tort Remedies into the Round Hole of Traditional Tort Law*, 1 DRAKE J. AGRIC. L. 263, 264 (1996) (noting that strict causation and present-injury requirements have prevented most tort claims resulting from toxic exposure from succeeding).

65. Joseph H. King, Jr., *Causation, Valuation, and Chance in Personal Injury Torts Involving Preexisting Conditions and Future Consequences*, 90 YALE L.J. 1353, 1354 (1981).

66. KLAR, *supra* note 23, at 453.

67. Wrongful birth cases in general are brought by parents who claim that the birth of their child should not have occurred; wrongful life cases are brought by the children claiming that their lives should not have occurred and would not have but for the doctor's negligence. *See id.* at 419.

68. RICHARDSON, *supra* note 34, at 75.

69. *See* Kealey v. Berezowski (1996), 30 O.R. 3d 37 (Can. Ont. Gen. Div.); RICHARDSON, *supra* note 34, at 420.

70. M.Y. v. Boutros, 2002 ABQB 362, para. 158 (Can.).

professional with a specific duty to prevent the child's birth—a healthy child could still be considered a blessing.[71]

In other cases, there is a different formulation of the harm. The child itself is not considered a harm, but the negligent interference with autonomy—with reproductive choice and control—is considered a harm that should be compensated for.[72] What becomes very clear in thinking through these issues is the difficulty that arises with objective determinations of harm. A healthy child is a blessing to some, but a burden to others.

Perhaps the image that best exemplifies the nagging inadequacy of how we find a harm in the Aamjiwnaang situation is not the classic lost-chance lottery-ticket analogy (because money is universally accepted as a desired outcome in the context of lotteries!), but a Midway game at a fair. Suppose that all of the prizes available for winners in the game are, objectively speaking, equal in value. You win the game and spin the wheel to determine your prize. But suppose the wheel is improperly weighted so that it is much less likely to stop on the prize that *you* want. Someone has interfered with your autonomy. Never mind that you do not have full control over the outcome. There is an element of chance. This is true with respect to reproduction, as it is true with respect to cancer, lotteries, and Midway games.

What about filing a lost-chance class action at the *community* level for the denial of the chance of reproducing and continuing in existence?

As explored earlier, the harm suffered by the members of the Aamjiwnaang is rendered visible through the "statistical vision" of epidemiology.[73] At an individual level it cannot be seen, yet in the aggregate it is obvious. There is perhaps a parallel here to the struggle for pay equity.[74] Just as individual Aamjiwnaang mothers'

71. For sharp commentary, see RICHARDSON, *supra* note 34.

72. *See Kealey*, 30 O.R. 3d at 70–71.

73. Sheila Jasanoff, *Science and the Statistical Victim: Modernizing Knowledge in Breast Implant Litigation*, 32 SOC. STUD. SCI. 37, 64 (2002).

74. Pay equity is a compensation practice aimed at addressing the gender wage gap by basing pay decisions on the value of work performed. Heidi I. Hartmann & Stephanie Aaronson, *Pay Equity and Women's Wage Increases: Success in the States, A Model for the Nation*, 1 DUKE J. GENDER L. & POL'Y 69, 71 (1994). Sex-based wage discrimination, even though the wage gap hovers around 30 percent, had to be proven to be believed; the same was true for the sex ratio disparity at Aamjiwnaang. Scott, *Chronic Pollution*, *supra* note 4, at 304; *see* Rosemary Hunter,

complaints of "so many girls" being born are easily dismissed in encounters with doctors' offices and public health units, individual women's complaints of "so little pay" are also routinely dismissed in encounters with lawyers and bosses. But at the population level the claims come into sharp relief, and the imbalance—the unfairness—is exposed.

But there is a downside to this move as well. Once aggregated, the harms graduate from subjective claims into statistical correlations. The focus is no longer on individual harm, but on probabilistic harm across disembodied populations. In exchange for the shift in focus that allows recognition of the aggregate harm, we forfeit detail at the level of individual lives. In revealing the pattern, individual stories get lost. But here—for both the depressed sex ratio and the depressed wages of women—the shift has the potential to overcome the tendency to dismiss each individual woman's complaint as a result of chance and to bring back the social origins of the problem and the blameworthiness of those who perpetuate it.

D. Reparation / Retribution

In each and every one of these imagined tort claims, it will always come down to a question of remedy. The primary remedy in tort is money damages.[75] In general, the aim is to translate the lost intangibles into monetary terms, which involves not only tricky exercises in valuation but also a good deal of "fortune telling"—in that it demands the prediction of future events.[76] There is no question that the tort system at present reflects and reinforces the view that money can substitute for health.[77] Jain calls this the "trope of compensation."[78] Based on the idea of reparable harm, the legal logic

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Afterword: A Feminist Response to the Gender Gap in Compensation Symposium, 82 GEO. L.J. 147, 148–53 (1993) (examining the history of gender-based wage discrimination and undervaluation of women's work).

75. *See* JOANNE CONAGHAN & WADE MANSELL, THE WRONGS OF TORT 56 (1993).

76. *Id.* at 58.

77. *Id.* at 61; Elaine Gibson, *The Gendered Wage Dilemma in Personal Injury Damages*, *in* TORT THEORY, *supra* note 40, at 185, 189. This further reinforces the way that tort law is invested in the individuated legal subject. As Alan Hyde states, "[b]ehind . . . the entire practice of monetary compensation for bodily injury must lie a hazy notion of the body as 'property' 'lost' to its owner." HYDE, *supra* note 48, at 63.

78. SARAH S. LOCHLANN JAIN, INJURY: THE POLITICS OF PRODUCT DESIGN AND SAFETY LAW IN THE UNITED STATES 12 (2006).

demands that the injury be made calculable in market terms, so that the injury can be "undone" through the monetary award of damages, and the injured can "buy back" what was lost.[79]

Can we "buy back" what has been taken from the Aamjiwnaang community? This must be where the parallel with pay equity breaks down. Pay equity can be addressed in monetary terms—the claims are actually *about* money. A depressed sex ratio is not about money, and it is only tangentially about health. "Recovery," in law, is meant to restore, repair, or compensate a victim as a matter of justice.[80] It aims to return the injured person to the condition she would have been in had the injury not occurred. The prospect of recovery for the Aamjiwnaang community makes it very clear that the wound, in this case, is much deeper than the injury—the wound will never be closed by a damages award (even if any were forthcoming).

Can this injury be reversed? Can a community recover from endocrine disruption? There is some ecological evidence suggesting it is likely that—at the population level at least—once the key exposures stop, the effects of endocrine disruption will begin to reverse.[81] If reversing such effects is the community's goal, then the remedy best suited is not damages—but injunction.

In conceiving the injury to have occurred at the scale of the *community*, we might also consider the tort of nuisance. Nuisance is attractive, at least conceptually, because the remedies available include both damages and injunction.[82]

E. Bad Neighbors / Nuisance

The tort of nuisance deals with relations between neighbors.[83] Often, we think of neighbors in a physical sense, as groups or individuals occupying adjacent pieces of land or at least being in a permanent state of proximity to each other. Generally, we acknowledge that neighbors do not choose each other. The

79. *Id.*

80. KLAR, *supra* note 23, at 11, 13.

81. *See* Karen A. Kidd et al., *Collapse of a Fish Population After Exposure to a Synthetic Estrogen*, 104 PROC. NAT'L ACAD. SCI. U.S. 8897 (2007).

82. *See* KLAR, *supra* note 23, at 715 (discussing how a public nuisance can constitute the basis for a private right of action for damages or injunction).

83. *See* CONAGHAN & MANSELL, *supra* note 75, at 107.

Aamjiwnaang and the Chemical Valley industry would likely meet this expectation.[84]

There are two classes of claims in nuisance. The first—private nuisance—specifically addresses unlawful interference with the use or enjoyment of land.[85] What is "unlawful"? It is "substantial and unreasonable" interference.[86] The second—public nuisance—applies when environmental harm generally affects a large class of people at the same time.[87] For public nuisance, a plaintiff can only succeed if she suffers special injury in the nature of personal injury or property damage.[88] The Aamjiwnaang's interest in land on the reserve is considered only possessory—but courts have found that sufficient to ground a claim for nuisance.[89]

On the surface, it seems that there are good arguments for the Aamjiwnaang under either branch of nuisance law. Under private nuisance, however, the Aamjiwnaang would have to overcome the hurdle of "lawfulness," or "legal authority," as discussed earlier. Under public nuisance, the Aamjiwnaang would be returned to the problem of demonstrating a personal injury, in an individual. For these reasons, nuisance law has proven relatively impotent in fights between communities and industry.[90] Further, the "wrong" would essentially lie in the violation of property rights and not in the interference with bodily integrity. As a result, even without assessing the loss in terms of money damages, it remains a commodification of the body, and of the community, because it relegates those interests to the property interest.

This discussion has skimmed over the question of whether compensation is the only legitimate goal of tort law.[91] What about other goals, such as justice, deterrence, education, punishment of

84. Although, on certain environmental justice or historical accounts, this may be open to debate. Did the chemical industry "choose" the Aamjiwnaang as their neighbors?

85. Lynda Collins, *Protecting Aboriginal Environments: A Tort Law Approach*, *in* CRITICAL TORTS 61, 70–71 (Sandra Rodgers et al. eds., 2009).

86. *See* Tock v. St. John's Metro. Area Bd., [1989] 2 S.C.R. 1181, 1192 (Can.).

87. Collins, *supra* note 85, at 71.

88. *Id.*

89. *Id.* at 74.

90. CONAGHAN & MANSELL, *supra* note75, at 107.

91. *See, e.g.*, Bruce Feldthusen, *If This Is Torts, Negligence Must Be Dead*, *in* TORT THEORY, *supra* note 40, at 394, 407–09.

carelessness, and retribution? In fact, in early conceptions of tort law, it was the victim's vengeance that was said to have been "purchased" by the offer of compensation.[92] Money flowed from the aggressor to the victim, essentially in exchange for community peace.[93] On reflection, of all of these potential aims of tort law, compensation is the only one that really turns on the relationship between individuals; the others are more open to alternative conceptions of harm and alternative scales to define injury.[94]

V. CONCLUSIONS

Contemporary pollution harms are pervasive, diffuse, body-altering, cumulative, and generational in character; the links between those harms and the suspected chemical culprits are tenuous and contested. Further, the harms are neither randomly distributed nor uniformly experienced. Tort law in its current form falls short of capturing the essence of this pollution because, in transforming the harm into a form cognizable by law, we are forced to locate it in separate, autonomous individuals. As Alan Hyde notes:

> [L]aw's discourse of the body constructs the body as a thing, separate from the person, but the bearer of that person . . . . The legal subject is an individual, and so is that subject's body. Each body is an individuated entity with distinct boundaries, an outside and an inside.[95]

Tort law, conventionally conceived, is an expression of the "liberal preference for non-intervention by the state into social arrangements."[96] It offers a private law solution between individuals. It is utterly unable to account for the way the pollution has saturated the community, been soaked up in bodies, and dissolved boundaries between selves and others. But brainstorming around tort law's potential remedies, at various scales, allows for the body to be opened up—the gender-bending synthetic chemicals flowing through bodies become visible, exposing the way they freely move between

92. Lucie Léger, *The Culture of the Common Law in the 21st Century: Tort Law's Response to the Needs of a Pluralist Society*, *in* TORT THEORY, *supra* note 40, at 162, 165.

93. *See id.*

94. Ernest J. Weinrib, *Understanding Tort Law*, 23 VAL. U. L. REV. 485, 501 (1989).

95. HYDE, *supra* note 48, at 258.

96. Conaghan, *supra* note 25, at 408 (footnote omitted).

individuals and their worlds—to the point that our insistence on a fixed bodily boundary and a centrally controlled self begins to break down.

In fact, the scale at which we conceive of an injury shapes the determination of whether, and on what terms, the injury is seen as remediable. Further, as William L.F. Felstiner, Richard L. Abel, and Austin Sarat demonstrated almost thirty years ago, these conceptions and determinations are implicit in the process of "naming," which shapes ideas about the allocation of blame for the harm.[97] Accordingly, just as Alan Hyde shows how various constructions of the body in jurisprudence carry consequences for actual persons,[98] here we see that our own constructions of "injury"—where and how we choose to find it—carry consequences for communities affected by contemporary pollution harms. In all likelihood, those constructions carry consequences for the just resolution of many other types of injuries for which we currently do not recognize remedies, as well.

Lucie White shows that whether or not an injury will indelibly mark its subject is often indeterminable.[99] To say that the harm itself is *collective* is to open it up to a trajectory that depends on actors outside of the subject. Further, as Marc Galanter argues, there is a mutually constitutive relationship between injuries and remedies, such that the remedy itself, or the process of seeking the remedy, or of negotiating a path forward without a remedy, may institute a process of healing, at various scales, that transforms the ultimate effect of the injury.[100]

Alan Hyde argues that we should "strive for a law and politics of embodied subjects."[101] As legal speakers, we choose when and how

97. *See* William L.F. Felstiner et al., *The Emergence and Transformation of Disputes: Naming, Blaming, Claiming . . .*, 15 LAW & SOC'Y REV. 631, 635 (1981).

98. Hyde's analysis uncovers the "multiple competing constructions of the body [that] are available to legal and other speakers," and shows that these constructions are "neither natural, nor limited by biology." HYDE, *supra* note 48, at viii. As he demonstrates, actors choose among these competing constructions for instrumental purposes: he takes the project of "denaturalization" to be an aim of critical legal scholarship. *Id.* at viii–ix.

99. I attribute this idea to Lucie White's presentation at the symposium. Lucie White, Remarks at Loyola Law School Los Angeles Symposium: Injuries Without Remedies (Mar. 26, 2010).

100. Marc Galanter, *The Dialectic of Injury and Remedy*, 44 LOY. L.A. L. REV. 1, 3 (2011).

101. *See* HYDE, *supra* note 48, at 262.

to "configure the body in relationship to others."[102] In our tort jurisprudence, in our determinations of what may count as harm, we need a jurisprudence that is truer to human experience. The task, as Leslie Bender frames it, is only to imagine creative, new remedies that can work to restore dignity and social equality, and remedies that acknowledge collective harms based on the interconnectedness of life.[103]

102. *Id.* at 9.

103. *See* Leslie Bender, *Feminist (Re)Torts: Thoughts on the Liability Crisis, Mass Torts, Power, and Responsibilities*, 1990 DUKE L.J. 848, 901–09.